Status of NSI implementation in GÉANT

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LHCOPN and LHCONE Joint Meeting

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Agenda

- Update of GÉANT NSI implementation: AutoBAHN
- Deployment of AutoBAHN
- Access to the service
- Update on OpenNSA/NORDUnet

Progressive deployment of AutoBAHN 3 (NSI CS v2.0 compliant)

- AutoBAHN 3.0 released in April
- Deployed on the backbone in parallel with AutoBAHN 2.4 (IDCP)
- AutoBAHN 3.1 released in September 2014; AutoBAHN 2.4 instance to be decommissioned

AutoBAHN 3.0

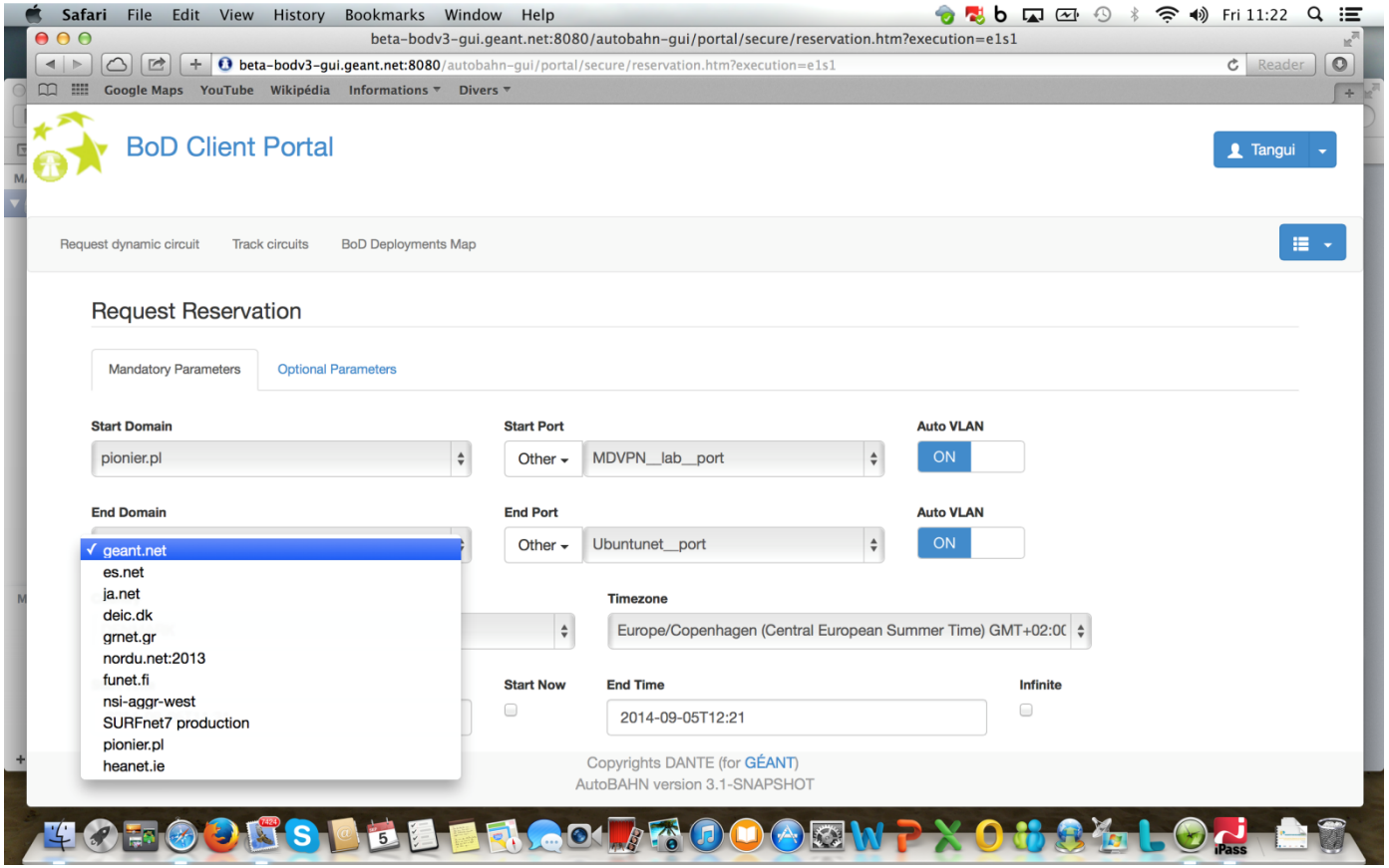
- Deployed on the GÉANT backbone

- Deployed in other European NRENs:
  - HEAnet
  - FUnet
  - DeIC
  - GRnet (test)
  - JANET(test)
  - DFN (test)
  - Carnet (test)

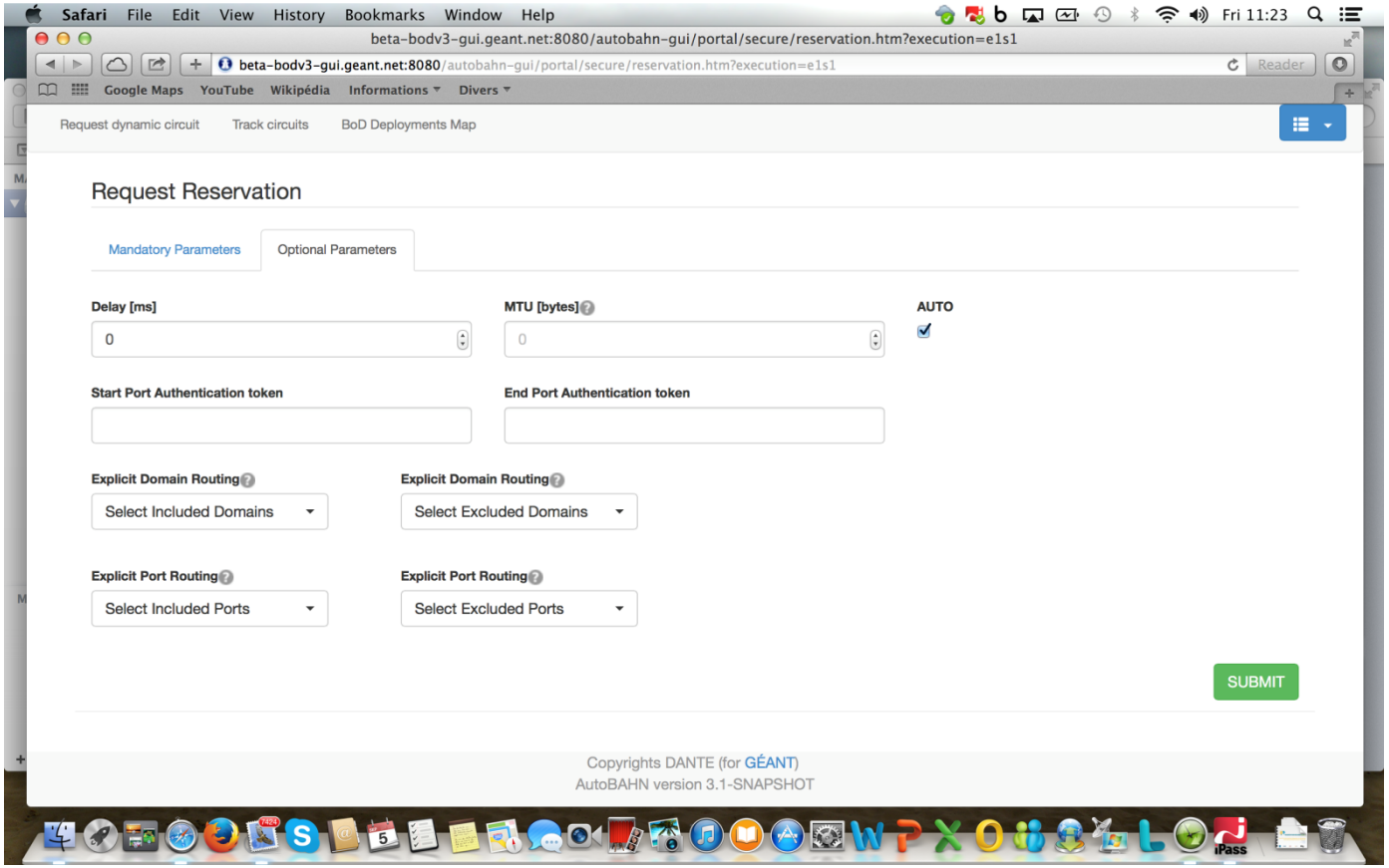
A few technical details

- All AutoBAHN instances operate identically (with the same code/ modules).
- Each instance functions both as a Request and Provider Agent RA/PA and simple Aggregator (AG).
- Simple AG means that it follows the CHAIN model: It is capable of sending the request to its own PA and the next PA on the reservation path.
- AutoBAHN instances share NSI/NML topology via the Topology Service, which can also be fed with topology from other instances. This is meant to be our customizable solution until the topology exchange mechanisms in NSI are standardized.

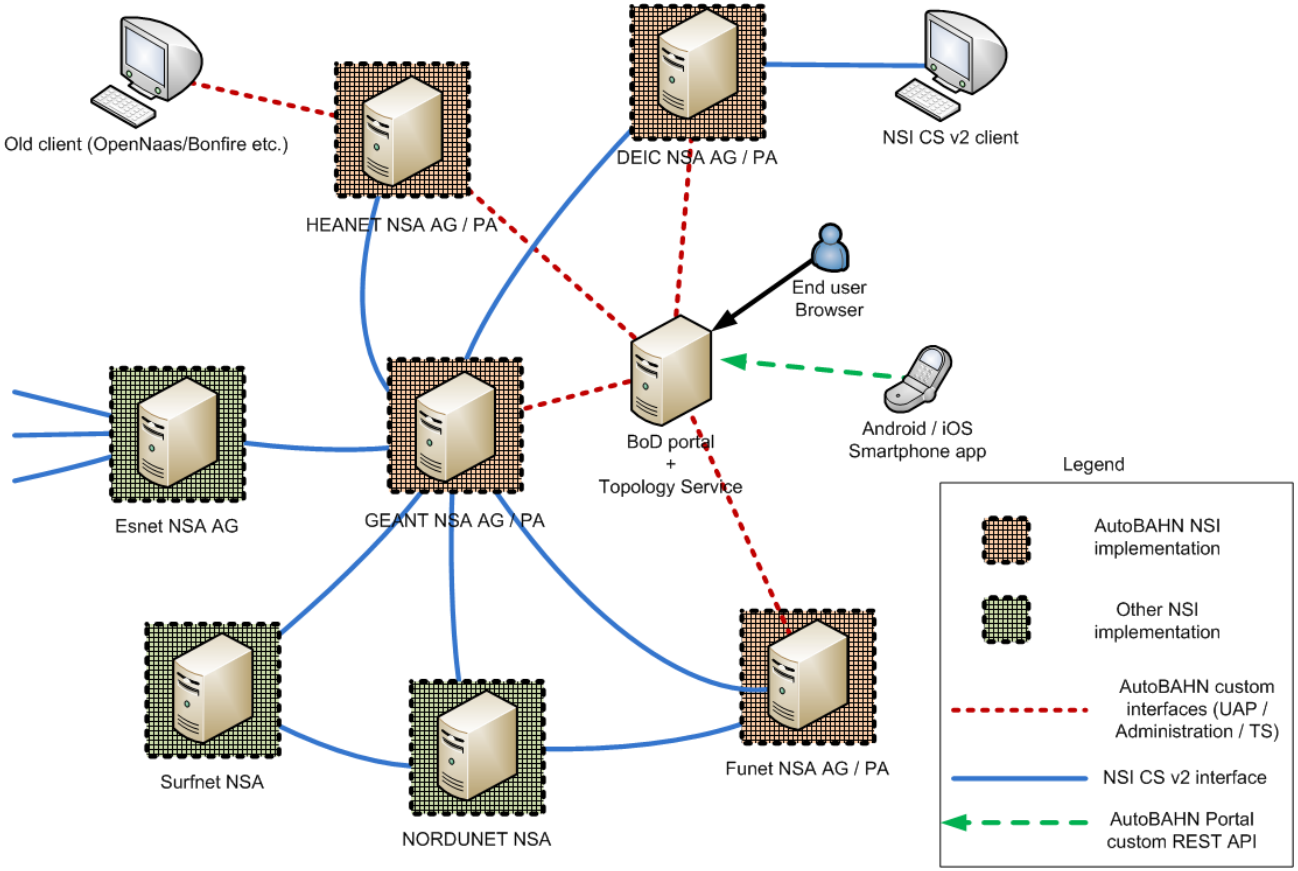
Access to the service: BoD Client Portal (1)



BoD Client Portal (2)



Access to the service: API



NORDUnet

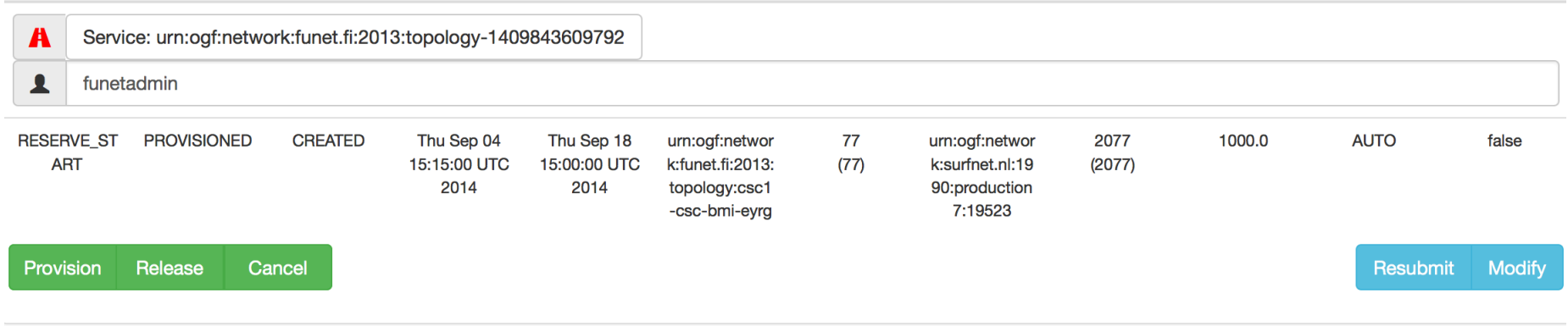
- Well working implementation (OpenNSA), that is used on multiple sites
  - Close collaboration with SURFnet and GÉANT
  - Well tested and connected to SURFnet and GÉANT
  - New connection to UvaLight
  - Have connected FUNET, more planned
- Control plane security with TLS and user attributes/tokens for authN
- Available on four edge nodes, MPLS tunnel over production network (Amsterdam, London, CPH, Helsinki)
- Test users between FUNET and SURFnet

NORDUnet

- Full integration into production infrastructure
- NOC support / handover
- Coordination with NSI group in AA & Topology
- Committed to launching an NSI/BoD production service

Used in production for real circuits

- CSC (Finland) to SurfSARA (Netherlands) for ELIXIR
- Using AutoBAHN (Funet), OpenNSA (NORDUnet) and BoD (SURFnet)



Thank you!

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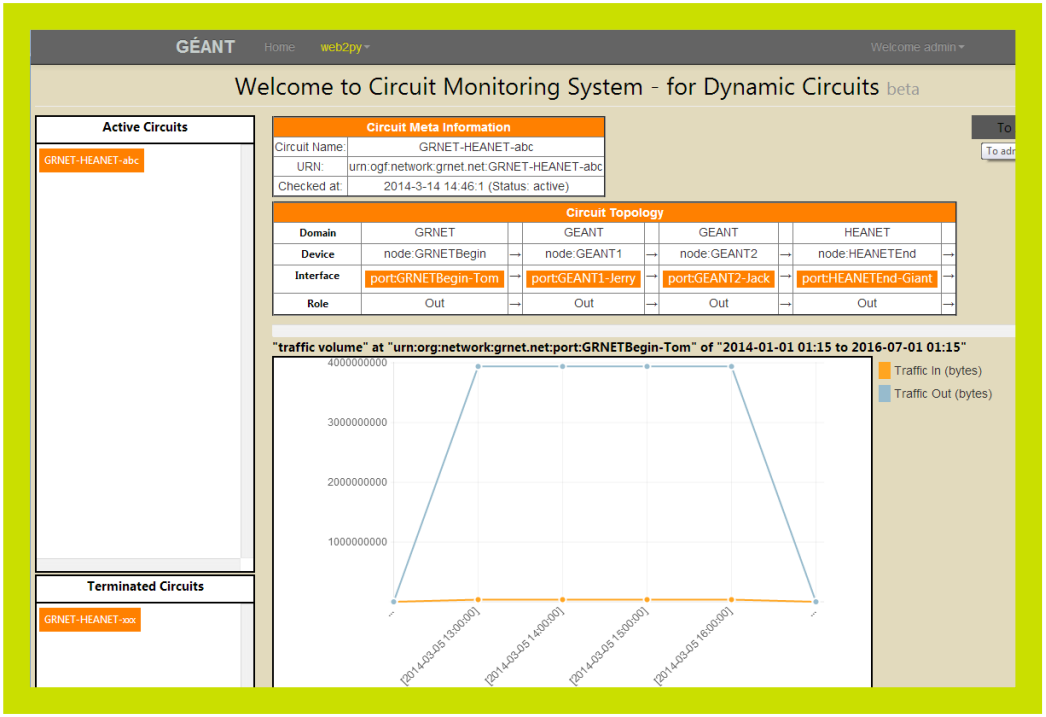
Work in Progress for Monitoring

- **Control-plane** solution recycling existing technologies (NAGIOS plugins, Icinga)
- CMon-D co-developed with SA4 for **data-plane** monitoring as a PerfSONAR extension



Work in Progress for AAI

- GUI eduGAIN-enabled
- Agreement with non-AutoBAHN domains regarding the European AAI approach:
  - Extending the approach already adopted by an NREN
  - Token based to exert control where it matters
- Standardisation effort within the NSI working group for a global solution